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ABSTRACT OF THE DISCLOSURE

A robust adaptive filter for use in a network echo canceller or other digital signal processing application utilizes a coefficient vector update device that, through the application of fast converging algorithms to a fast impulse response filter yields fast convergence of the adaptive filter's characteristics with the avoidance of divergence due to the onset of double talk. Robustness is also provided, via an adaptive scale non-linearity device which applies an adaptive scale non-linearity to the filter algorithms fed to the fast impulse response filter by the coefficient vector update device, so that the samples of an echo signal to be cancelled which are taken during the onset of double talk can be handled in such a manner that after the double talk detector causes adaptation to cease, the initial, potentially disturbing samples do not cause significant divergence in the filter system.